

Public Page
Corrosion Assessment Criteria: Rationalizing Their Use
Applied to Early Versus Modern Pipelines
Agreement DTRS56-03-T-0014
7th Quarterly Status Report
Period April 1, 2005 to June 30, 2005
Contractor: Battelle

Technical Status

The work in the 7th quarter has begun to quantify and trend the effect of corrosion defect geometry on pipelines as a function of pressure and local bending loading on pipelines. The parametric formulation and analysis developed at the specimen level and adapted to pipelines in the 6th quarter has been used in conjunction with stress analysis at notches to quantify the effects of constraint in such corrosion patches. These results are being trended to quantify constraint as a function of typical line-pipe properties for vintage versus modern line pipe steels, with a view to guide use of 70s versus 90s vintage corrosion assessment criteria. Key activities started include quantifying the effect of corrosion defect geometry on pipelines as a function of pressure and local bending loading on pipelines.

Numerical modeling has developed results for the strains developed at notches as a function of acuity that when coupled with the fracture-mechanics constraint analysis recently finalized for pipelines indicates cracking is likely where it has been observed previously for blunt corrosion defects. The next quarterly will present these guidelines.

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